UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,944	04/28/2005	Aloys Wobben	970054.471USPC	8801

500 7590 03/23/2006

SEED INTELLECTUAL PROPERTY LAW GROUP PLLC
701 FIFTH AVE
SUITE 6300
SEATTLE, WA 98104-7092

EXAMINER	
AMRANY, ADI	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/506,944	WOBBEN, ALOYS	
	Examiner	Art Unit	
	Adi Amrany	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5/31/05, 8/28/05, 10/27/05, 1/19/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. Claims 1-17 and 19-24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/380,786. Although the conflicting claims are not identical, they are not patentably distinct from each other due to the reasons provided below.

37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

2. The present and copending application use slightly different names to refer to the same components. These components were provided in their respective specification with identical descriptions. They are:

a. "first power generator" in the present application is identical to the "first energy producer" in the copending application;

b. "renewable energy source" is identical to a "regenerative energy source;"

c. "wind-power station" is identical to the "wind energy system;"

d. "electrical intermediate storage device" is identical to the "interim electricity storage unit;"

e. "dc voltage intermediate circuit" is identical to the "dc link;"

f. "boost/buck converter" is identical to "step-up or step-down converter;"

g. "network-commutated inverter" is identical to the "line-commuted dc-ac converter;"

h. "electromagnetic coupling" is identical to the "electromagnetic clutch;"

i. "primary power generator" is identical to the "first primary energy producer first;"

j. "network generator" is identical to the function of the "pulse-former;"

3. With respect to claim 1 of the present application, it is drawn to claim 1 of the copending application.

An isolated electrical network with at least one first power generator, which uses a renewable energy source, wherein the power generator is preferably a wind-power station with a generator, wherein a second generator is provided, which can be coupled to an internal combustion engine (lines 1-4),

wherein the wind-power station can be controlled in terms of its rpm and blade position (lines 5-6);

characterized in that a bus bar for feeding the generated energy into the network is formed and a device connected to a bus bar for detecting the power required in the network is provided,

and at least one intermediate storage device for storing electrical energy is provided ("electrical storage unit"; lines 9 and 13),

wherein the intermediate storage device can be coupled to the first power generator and for the case that the output power of the first power generator is greater than the power of the load required in the network, at first electrical energy of the first generator is supplied to the intermediate storage device if the intermediate storage device is not full (lines 7-10),

and/or if more energy is consumed in the network than is generated by the first power generator, at first the electrical intermediate storage device is used for delivering power (lines 11-13).

Although the present application does not expressly disclose a "bus bar" and a "device," as recited in the copending application, a person of ordinary skill in the art would understand that such components would be obvious in the present application. The "bus bar," while not disclosed on the '786 specification, is understood to comprise "a conductor or an assembly of conductors for collecting electric currents and distributing them to outgoing feeders" (Merriam-Webster Online Dictionary). Further, claim 1 recites that a bus bar "is formed," which is interpreted to mean that the bus bar is automatically created when the outputs of the first power generator and the second generator are combined. It would be obvious to a person skilled in the art that in the copending application ('786), an assembly of conductors would be placed at the outputs of the first energy producer and the second generator.

Further, it is obvious that the "device" for detecting the power required in the network is present in the copending application. Claim 1 of '786 recites that the wind energy system is controlled based on the power required. It would be obvious to a person skilled in the art that the network of '786 includes a "device," as defined in the present application ('944).

Dependent claim 13 of the present application refers to the electromagnetic coupling of claim 1. Although the electromagnetic coupling is not provided as a limitation of independent claim 1, it would be obvious to include this limitation. The motivation for doing so would have been to provide a connection between the movable parts of the combustion engine and the generator that can be disconnected when the combustion engine is not in operation. Also, Claim 1 of the '786 application, filed on April 18, 2005 (after the amendment to reduce the total number of claims to 20), recites the limitation of an electromagnetic clutch. The clutch and coupling perform the same function of connecting the internal combustion engine to the synchronous generator (page 7, lines 23-26). Therefor, the limitation of the electromagnetic coupling, although not explicitly provided in claim 1, is met by claim 1 of the copending application.

With respect to claim 2 of the present application, it is drawn to claim 2 of the application '786:

The isolated electrical network according to claim 1, characterized in that the first power generator has a synchronous generator which contains a converter with a dc voltage intermediate circuit with at least one first rectifier and an inverter (lines 1-3).

The elements listed are provided in a different order, namely, the inverter and converter appear to be switched. The claim, however, still reads directly on claim 2 of the copending application.

With respect to claim 3 of the present application, it is drawn to claim 3 of the '786 application:

The isolated electrical network according to claim 1, characterized by at least one electrical element connected to the dc voltage intermediate circuit for feeding electrical energy with dc voltage (lines 1-2).

With respect to claim 4 of the present application, it is drawn to claim 4 of the '786 application:

The isolated electrical network according to claim 3, characterized in that the electrical element is a photovoltaic element and/or a mechanical energy storage device and/or an electrochemical storage device and/or a capacitor and/or a chemical storage device as electrical interim storage unit (lines 1-4).

With respect to claim 5 of the present application, it is drawn to claim 5 of the '786 application:

The isolated electrical network according to claim 1, characterized by a flywheel, which can be coupled to the second or a third generator (lines 1-2).

With respect to claim 6 of the present application, it is drawn to claim 6 of the '786 application:

The isolated electrical network according to claim 1, characterized by several internal combustion engines, which can each be coupled to a generator (lines 1-2).

With respect to claim 7 of the present application, it is drawn to claim 7 of the '786 application:

The isolated electrical network according to claim 1, characterized by a controller for controlling the island network (lines 1-2).

With respect to claim 8 of the present application, it is drawn to claim 8 of the '786 application:

The isolated electrical network according to claim 1, characterized by a boost/buck converter between the electrical element and the dc voltage intermediate circuit (lines 1-2).

With respect to claim 9 of the present application, it is drawn to claim 9 of the copending '786 application:

The isolated electrical network according to claim 1, characterized by charging/discharging circuits between the electrical storage element and the dc voltage intermediate circuit (lines 1-2).

With respect to claim 10 of the present application, it is drawn to claim 10 of the '786 application:

The isolated electrical network according to claim 1, characterized by a flywheel with a generator and a downstream rectifier for supplying electrical energy into dc voltage intermediate circuit (lines 1-2).

With respect to claim 11 of the present application, it is drawn to claim 11 of the '786 application:

The isolated electrical network according to claim 1, characterized in that all of the power generators using renewable energy sources and intermediate storage devices power a common dc voltage intermediate circuit (lines 1-2).

With respect to claim 12 of the present application, it is drawn to claim 12 of the '786 application:

The isolated electrical network according to claim 1, characterized by a network-commutated inverter (lines 1-2).

With respect to claim 13 of the present application, it is drawn to claim 13 of the copending '786 application:

The isolated electrical network according to claim 1, characterized in that the energy for operating the electromagnetic coupling is made available by an electrical storage device and/or by a primary power generator (lines 1-3).

With respect to claim 14 of the present application, it is drawn to claim 14 of the '786 application:

The isolated electrical network according to claim 1, characterized in that a seawater desalination/service water generation plant is connected to the island network, wherein this plant generates service water (drinking water), when the power supplied by the primary power generator is greater than the power consumption of the other electrical loads connected to the island network (lines 1-4).

With respect to claim 15 of the present application, it is drawn to claim 15 of the '786 application:

The isolated electrical network according to claim 1, characterized in that a pump storage device is provided, which receives its electrical energy from the primary power generator (lines 1-3).

With respect to claim 16 of the present application, it is drawn to claim 16 of the copending '786 application:

An isolated electrical network:

with at least one first primary power generator for generating electrical energy for an electrical island network (lines 2-3);

wherein a synchronous generator is provided, which has the function of a network generator (line 3);

wherein the synchronous generator can operate in motor mode and the energy required for the motor operation is made available by the primary primary power generator (lines 3-5).

With respect to claim 17 of the present application, it is drawn to claim 17 of the '786 application:

The isolated electrical network according to claim 16, characterized in that the generator can be connected to an internal combustion engine, which is deactivated when the electrical power of the primary power generator is greater or approximately the same size as the electrical power consumption in the island network (lines 1-4).

Claims 19-24 are rejected as obvious type double patenting because the method recited within the claims follows on the apparatus of claims 1-15 of the copending '786 application.

With respect to claim 25 of the present application, it is drawn to claim 20 of the copending '786 application:

Use of a synchronous generator as a network generator for a network-commutated inverter for feeding an alternating current into an electrical supply network, wherein the generator works in motor operation and the drive of the generator is realized by a flywheel and/or by providing electrical energy from a renewable energy power generator (lines 1-6)

Claim 25 of the present application and claim 20 of the copending application are both drawn to the "use" of a synchronous generator. Although claim 20 of '786 appears to be an apparatus claim, the language "a synchronous generator *as* a pulse-former" renders it a use claim. In that light, the limitations of claim 25 are met by claim 20 of the copending application.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 19-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Wichert ("PV-Diesel Hybrid Energy Systems for Remote Area Power Generation – A

Review of Current Practice and Future Developments"), from applicant's Information Disclosure Statement.

With respect to claim 1, Wichert discloses an isolated electrical network (figure 1 on page 213; page 209, Introduction, lines 1-3) with at least one first power generator (page 212, lines 1-3), which uses a renewable energy source, wherein the power generator is preferably a wind power station with a generator (figure 1, "wind generator"), wherein a second generator is provided, which can be coupled to an internal combustion engine (figure 1, "diesel engine + alternator"),

wherein the wind power station can be controlled in terms of its rotational rpm and blade position (specification, page 6, lines 26-28),

characterized in that a bus bar (figure 1, "dc bus") for feeding the generated energy into the network is formed and a device connected to a bus *bar* for detecting the power required in the network is provided,

and at least one intermediate storage device for storing electrical energy is provided (figure 1, "battery bank;" page 211, lines 26-28),

wherein the intermediate storage device can be coupled to the first power generator and for the case that the output power of the first power generator is greater than the power of the load required in the network, at first electrical energy of the first generator is supplied to the intermediate storage device if the intermediate storage device is not full (page 211, lines 28-29),

and/or if more energy is consumed in the network than is generated by the first power generator, at first electrical intermediate storage device is used for delivering power (page 211, lines 29-30).

Wichert discloses that a second generator is coupled to the internal combustion engine (page 212, lines 21-23, "engine-driven generator"). Applicant's specification discloses that the wind generator is controlled in a *known manner* (page 6, line 26-29) and further describes the method of control by variable speed and variable blade adjustment (page 3, lines 26-29).

It is inherent in the system disclosed in Wichert that it further comprises a device for detecting power required in the network. The Wichert energy system must contain a device capable of determining when to charge or discharge the electrical intermediate storage devices. Therefor, it is necessary that the Wichert system further include a device for detecting the power required in the network.

With respect to claim 19, Wichert discloses the apparatus necessary to complete the recited method, as discussed in the rejection of claim 1, above. Wichert inherently discloses that the wind-power station always generates only the required electrical power as long as the consumption of the electrical power in the network is less than the electrical energy generation capacity of the wind-power station. By definition, the wind-power station cannot generate more energy that its own capacity. Wichert discloses the use of a secondary power source to supplement the wind-power station in instances of high power demand that exceed the capacity of the wind-power station.

With respect to claim 20, Wichert discloses method of claim 19, and further discloses the apparatus necessary to complete the method of claim 20, as discussed in the rejection of claim 1, above.

With respect to claim 21, Wichert discloses the method of claim 20, and further discloses the apparatus necessary to complete the method recited in claim 21, as discussed above in the rejection of claim 1. Wichert disclose the internal combustion engine are provided for driving at least one second generator (figure 1, "diesel engine + alternator"), and the internal combustion engines are turned on only when the power delivered by the power generators using renewable energy sources and/or by the electrical intermediate storage devise falls below a predetermined threshold for a predetermined period of time (page 212, lines 29-31). Wichert discloses that the internal combustion engines are engaged when the power supplied from the renewable energy source during "extended periods" of "low energy."

With respect to claim 22, Wichert discloses the method according to claim 21, and further discloses the apparatus necessary to complete the method recited in claim 22, as discussed in the rejection of claim 1, above (see also page 211, lines 28-29).

With respect to claim 23, Wichert discloses the method according to claim 19, and further discloses the apparatus necessary to complete the method recite in the claim 23, as discussed in the rejection of claim 1, above. Wichert discloses using electrical intermediate storage devices (figure 1, "battery bank"; page 211, lines 26-28).

With respect to claim 24, Wichert discloses the method according to claim 19, and further discloses the apparatus necessary to complete the method recited in claim 24, as discussed in the rejection of claim 1, above (see also page 211, lines 29-30).

6. Claims 16-17, and 25 are rejected under 35 U.S.C. 102 (b) as being anticipated by De Zeeuw ("On the Components of a Wind Turbine Autonomous Energy System"), provided in applicant's Information Disclosure Statement.

With respect to claim 16, De Zeeuw discloses an isolated electrical network ("autonomous energy system") with at least one first primary power generator (figure 1, SM1; page 193, column 1, lines 15-16) for generating electrical energy for an *isolated* electrical network, wherein a synchronous generator (figure 1, SM2; page 193, column 2, lines 3-10) is provided, which has the function of a network generator, wherein the synchronous generator can operate in motor mode (page 193, column 2, lines 11-15, "synchronous compensator") and the energy required for the motor operation in is made available by the primary power generator.

If the internal combustion engine is turned off or disconnected from the system, the only source of energy is the primary power generator (wind turbines). Therefor, it is inherent that the primary power generator would power the synchronous generator in motor mode.

The phrase "island network" appears in the body of claim 16, as well as in numerous other claims. Applicant will note that in the preliminary amendment, dated September 8, 2004, the claimed device was changed from an "electrical island network"

to "an isolated electrical network." Therefor, each occurrence of "island network" has been replaced with *isolated* network in each art rejection.

With respect to claim 17, De Zeeuw discloses the isolated network according to claim 16, and further discloses the *synchronous* generator can be connected to an internal combustion engine (figure 1; page 193, column 2, lines 8-11), which is deactivated when the electrical power of the primary power generator is greater or approximately the same size as the electrical power consumption in the *isolated* network.

In claim 17, there is no description of which generator can be connected to an engine. In light of the drawings and specification, for the purposes of the art rejection of claim 17, it is interpreted that the applicant intended to mean the *synchronous* generator.

With respect to claim 25, De Zeeuw discloses the use of a synchronous generator as a network generator (figure 1, SM2; page 193, column 2, lines 3-10) for a network-commutated inverter (page 193, column 1, line 44 to column 2, line 2) for feeding an alternating current into an electrical power supply network, wherein the generator works in motor operation (page 193, column 2, lines 11-15, "synchronous compensator") and the drive of the generator is realized by a flywheel and/or by providing electrical energy from a renewable-energy power generator (figure 1, SM1; page 193, column 1, lines 15-16).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-4, 7-8, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw. This is a separate and alternate rejection to the prior §102(b) rejection based on Wichert.

With respect to claim 1, Wichert discloses the isolated electrical network, as discussed above, but does not expressly disclose that the wind energy system can be controlled in terms of its rpm and blade position.

De Zeeuw discloses that the speed of the wind rotor can be controlled by adjusting the blade-angle (page 193, column 2, lines 41-46).

Wichert and De Zeeuw are analogous because they are from the same field of endeavor, namely, hybrid energy systems that utilize both a renewable energy source and an internal combustion engine.

At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert with the blade angle/speed control disclosed in De Zeeuw.

The motivation for doing so would have been to control the output of the wind energy system in the instance where the output was larger than the capacity of the rest of the system.

With respect to claim 2, Wichert discloses the isolated electrical network according to claim 1, but does not expressly disclose the first power generator has a synchronous generator, which contains a converter with a dc voltage intermediate circuit with at least one first rectifier and an inverter. Wichert discloses using a bi-directional inverter (figure 1; page 212, lines 36-37).

De Zeeuw discloses a first energy producer (page 193, column 1, lines 15-16), a synchronous generator (page 193, column 2, lines 3-5), and a converter (figure 1; page 193, column 1, lines 19-21), which contains a rectifier, a dc link, and an inverter.

The elements recited in claim 2 are treated as separate, but connected, components, as shown in figure 1.

With respect to claim 3, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1. Wichert further discloses at least one electrical element (figure 1, "battery bank"; page 211, lines 26-28) connected to the dc voltage intermediate circuit for feeding electrical energy with dc voltage.

With respect to claim 4, Wichert and De Zeeuw disclose the isolated electrical network according to claim 3, and further, Wichert discloses that the electrical element is a photovoltaic element and/or a mechanical energy accumulator and/or an electrochemical storage unit and/or a capacitor and/or a chemical storage unit as the electrical intermediate storage device (page 211, lines 28-41).

With respect to claim 7, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; Wichert discloses a controller (page 212,

lines 37-39) for controlling the *isolated* network. De Zeeuw also shows a power control, rectifier control, and frequency control units in figure 1.

With respect to claim 8, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; Wichert discloses a boost/buck converter (figure 1, "battery charger") between the electrical element and the dc voltage intermediate circuit. The battery charger, while not specifically disclosed in the article, is shown in the figure to be a dc/dc converter.

With respect to claim 11, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; Wichert discloses that all of the power generators using renewable energy sources and intermediate storage devices power a common dc voltage intermediate circuit (figure 1, "dc bus").

With respect to claim 12, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; De Zeeuw discloses a network-commutated inverter (page 193, column 1, line 44 to column 2, line 2).

With respect to claim 13, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; De Zeeuw discloses the energy for operating the electromagnetic coupling is made available by an electricity storage device and/or by a primary power generator (figure 1; page 193, column 2, lines 8-11). It is inherent that the energy for operating the coupling must come from within the isolated system. Although De Zeeuw does not expressly disclose where the power is taken from, it would be obvious to a person of ordinary skill that the wind turbines or the controllable loads would supply the operating power.

With respect to claim 14, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; De Zeeuw discloses a seawater desalination/service water generation plant is connected to the *isolated* network, wherein this plant generates service water (drinking water), when the power supplied by the primary power generator is greater than the power consumption of the other electrical loads connected to the *isolated* network (page 193, column 1, lines 1-14). De Zeeuw discloses that the isolated network is designed for supplying electricity to an area where no utility grid exists, and that the network has been used on a coastline. De Zeeuw also provides a discussion on how to prevent salt corrosion on the wind turbine. It would be obvious to a person skilled in the art to use this network in a locale where there are no established sources of electricity or drinkable water. De Zeeuw further discloses that excess energy may be routed to a controllable load (page 193, column 2, lines 15-20). Therefor, it would be obvious to supply power generated by the isolated electrical network to a seawater desalination/usable water production plant.

9. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Da Ponte (US 6,175,217).

With respect to claim 5, Wichert, in view of De Zeeuw, discloses the isolated electrical network according to claim 1, but Wichert and De Zeeuw do not expressly disclose a flywheel, which can be coupled to the second or a third generator.

Da Ponte discloses at least one controllable source (column 1, lines 40-41; column 3, lines 57-62), whose output can be regulated by an energy storage device, such as a flywheel (figure 5, item 28; column 7, lines 50-53).

Wichert, De Zeeuw, and Da Ponte are analogous because they are from the same field of endeavor, namely regulating the output of a hybrid energy system.

At the time of the invention by applicant, it would have been obvious to a person of ordinary skill in the art to combine the hybrid energy system disclosed in Wichert and De Zeeuw with the flywheel energy storage device disclosed in Da Ponte and to couple the flywheel to the second generator.

The motivation for doing so would have been to provide a electrical network that can cope with substantial variations in load requirements while also operating efficiently.

With respect to claim 10, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1. Wichert and De Zeeuw do not expressly disclose a flywheel with a generator for supplying energy into the dc voltage intermediate circuit.

Da Ponte discloses at least one controllable source (column 1, lines 40-41; column 3, lines 57-62), whose output can be regulated by an energy storage device, such as a flywheel (figure 5, item 28; column 7, lines 50-53).

It appears the "downstream rectifier" is the inverter 24, which is not a separate device from the previously claimed inverter.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Jaunich (US 6,605,880).

Wichert, in view of De Zeeuw, discloses the isolated electrical network according to claim 1, as discussed above. Wichert and De Zeeuw do not expressly disclose several internal combustion engines, each can each be coupled to a generator.

Jaunich discloses a plurality of secondary generators (column 3, lines 61-67), where the generators can be internal combustion engines (column 3, lines 46-50).

Wichert, De Zeeuw, and Jaunich are analogous because they are from the same field of endeavor, namely hybrid energy systems that utilize both a renewable energy source and an internal combustion engine

At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert and De Zeeuw, with the multiple internal combustion engines disclosed in Jaunich.

The motivation for doing so would have been to increase the power capacity of the isolated electrical network to supply the quantity of power required by the loads.

11. Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Suzuki (JP 2000-073931A).

Wichert, in view of De Zeeuw, discloses the isolated electrical network according to claim 3, as discussed above. Wichert discloses a battery bank, as discussed above. Wichert and De Zeeuw, however, do not expressly disclose charge/discharge circuits between the electrical storage element and the dc voltage intermediate circuit.

Suzuki discloses a charging and discharging device placed between the electrical element and the dc voltage intermediate circuit (figure 1, item 5; abstract, lines 1-9). Suzuki discloses that the electrical element is a NaS battery (figure 1, item 6) and

further discloses that the output power of the wind power generating equipment (figure 1, item 2) is passed through a rectifier (figure 1, item 3). Therefor, the output of the charging/discharging device is connected to the dc voltage intermediate circuit.

Wichert, De Zeeuw, and Suzuki are analogous because they are from the same field of endeavor, namely hybrid energy systems that utilize both a renewable energy source and an internal combustion engine

At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert and De Zeeuw, with the charging/discharging device disclosed in Suzuki.

The motivation for doing so would have been to control the charging and discharging of the battery in order to feed a constant power to the isolated electrical network.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Offringa (EP 046,530 A1).

Wichert, in view of De Zeeuw, discloses the isolated electrical network according to claim 1. Wichert and De Zeeuw do not expressly disclose a pump storage device is provided, which receives its electrical energy from the primary power generator.

Offringa discloses uses variations in a wind turbine's power output to control a pump station, in order to pump water to increased heights (abstract, lines 16-20).

Wichert, De Zeeuw, and Offringa are analogous because they are from the same field of endeavor, namely hybrid energy systems that utilize both a renewable energy source and an internal combustion engine

At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert and De Zeeuw, with having the excess network power supplied to a pump station, as disclosed in Offringa.
The motivation for doing so would have been to apply excess power to a load in order to keep the network power output constant.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Zeeuw, in view of Wichert.

De Zeeuw discloses the isolated network according to claim 16, as discussed above. De Zeeuw also discloses a bus bar for feeding the generated energy into the network. This is shown in figure 1 by the conductors between the rectifiers and inverters.

De Zeeuw does not expressly disclose a device attached to the bus bar for detecting power required in the network. De Zeeuw does discuss controllability based on too much or too little power, but there is no mention of a device for detecting the power required by the network.

Wichert inherently discloses a device for detecting the power required by the load, as discussed above. It would have been obvious to combine the isolated network disclosed in De Zeeuw with the device for detecting the power required by the network disclosed in Wichert. The motivation for doing so would have been to determine when to charge or discharge the electrical intermediate storage devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on weekdays, from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PHUONG T. VU
PRIMARY EXAMINER